FIG. 1

32 — BEGIN EXECUTION OF
CURRENT ACTION
WITHIN SCHEDULE

30

34 — CURRENT
ACTION
COMPLETED
?   NO

YES

42 — SELECTIVE
COMPENSATION

40 — ABORT PARENT
TRANSACTION   YES   36 — CURRENT
ACTION
ABORTED
?

NO

38 — MORE ACTIONS
WITHIN PARENT
TRANSACTION ?

OBTAIN
NEXT
ACTION   YES

44

46 — COMMIT PARENT
TRANSACTION,
THEREBY
ALLOWING
ASSOCIATED
DATA TO BE
UNLOCKED   NO

FIG. 2

BEGIN NEW PARENT
TRANSACTION WITHIN
SCHEDULE — 52

50

STORE SCHEDULE STATE
INFORMATION TO STORAGE
MEDIUM — 54

56

EXECUTE
ACTIONS AND
TRANSACTIONS
WITHIN THE
PARENT
TRANSACTION

62

SELECTIVE
COMPENSATION

60

ABORT PARENT
TRANSACTION

YES

58

ANY FAULT
DETECTED ?

NO

64

ALL
ACTIONS AND
TRANSACTIONS IN
PARENT
COMPLETED
?

NO

66

STORE
SCHEDULE
STATE
INFORMATION
TO STORAGE
MEDIUM AND
COMMIT PARENT
TRANSACTION

YES

FIG. 3

FIG. 4

BUSINESS WORKFLOW PROCESSING LANGUAGE

schedule	: : =	header? process? contextRef?
header	: : =	portList? messageList? contextList?
process	: : =	zero | sequence | switch | map | copy|
		partition | connect | cut
portList	: : =	port*
messageList	: : =	message*
contextList	: : =	context*
zero	: : =	zero
sequence	: : =	genericAction* process? contextRef?
genericAction	: : =	silence | action | task | call | return | release
silence	: : =	silence
action	: : =	source | sink
source	: : =	portRef messageRef contextRef?
sink	: : =	portRef messageRef contextRerf?
task	: : =	action* contextRef?
call	: : =	schedRef portRef* messageRef* contextRef?
switch	: : =	branch* (default process) ? contextRef?
branch	: : =	case process
case	: : =	ruleRef msgRef msgRef
map	: : =	process assignmentList? contextRef?
assignmentList	: : =	asignment*
assignment	: : =	messageRef portRef
copy	: : =	process contextRef?
partition	: : =	process* contextRef?
connect	: : =	process process connectionList contextRef?
connectionList	: : =	connection*
connection	: : =	portRef portRef
cut	: : =	process process process contextRef?

FIG. 5

_120_

Schedule (EBNF)		
schedule	: : =	_schedule_ name identity header process contextRef?
name	: : =	_name identifier_
identity	: : =	_guid GUID_
header	: : =	portList messageList contextList?
portList	: : =	_portList_ port*
messageList	: : =	_messageList_ message*
contextList	: : =	_contextList_ context*
scheduleRef	: : =	_scheduleRef_ URI

FIG. 6

_130_

Context (EBNF)

context : : = context localDecls? process transaction? exception?

transaction : : = transaction txnid compensation?

txnid : : = NCname

compensation : : = compensation process

exception : : = exception pick finally?

finally : : = finally process

FIG. 7

MEMORY 1

MEMORY 2

- - -

MEMORY N
142

142

142

COMPUTER 1

COMPUTER 2

- - -

COMPUTER N

144

144

144

146

140

NON-VOLATILE
MEMORY

148

FIG. 8

FIG. 9

180

182 — DATA E

184 — DATA F

186 — DATA G

TX_z

ACTION E — 162

164 — ACTION F

166 — ACTION G

188

EXECUTION ENGINE

FIG. 10

195

EXECUTION ENGINE

TX_Y

TX_W
ACTION A
176

174
ACTION D

178
TX_X
ACTION B

172
ACTION C

190

192
DATA A

194
DATA B

DATA C
196

198
DATA D
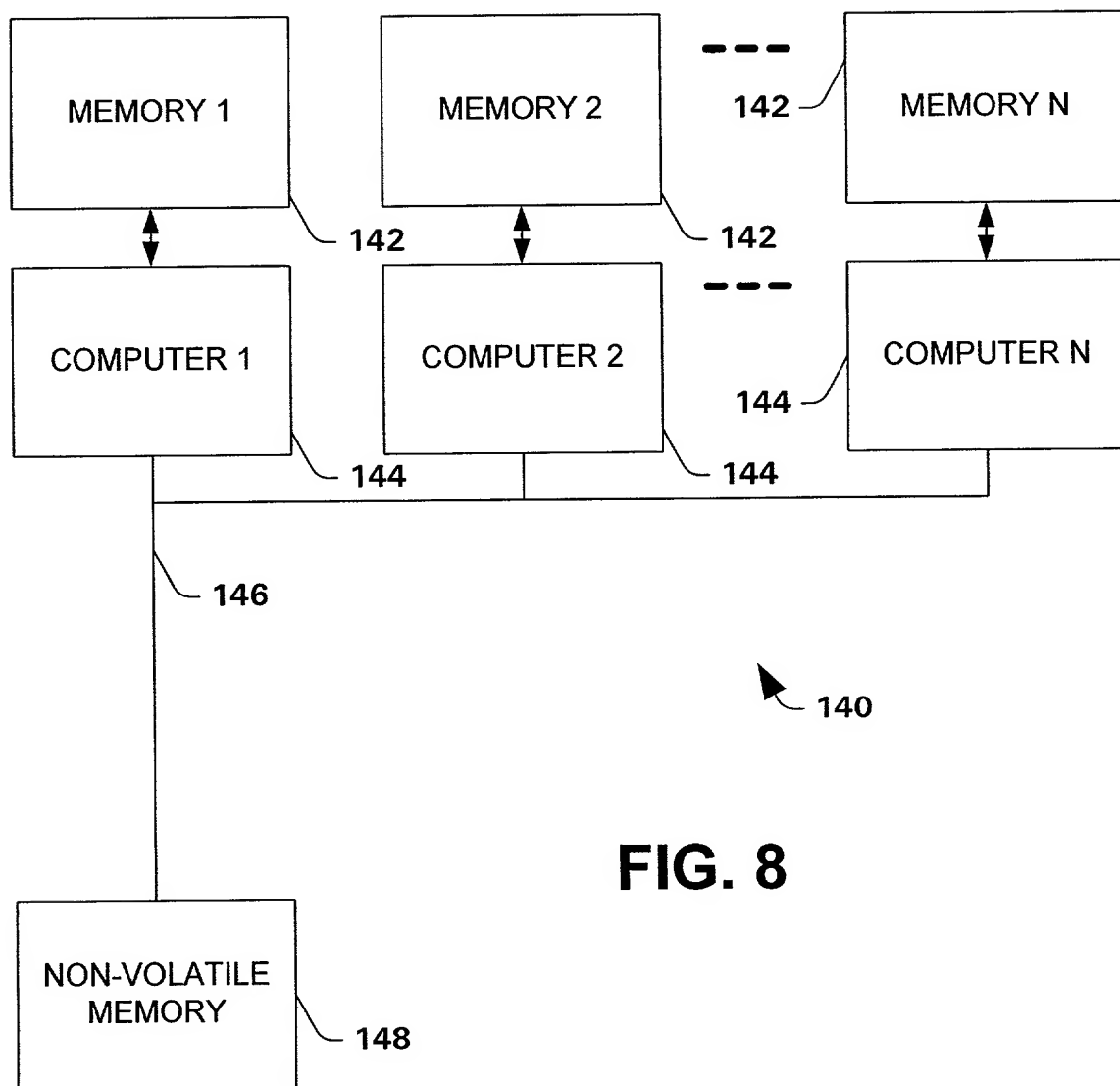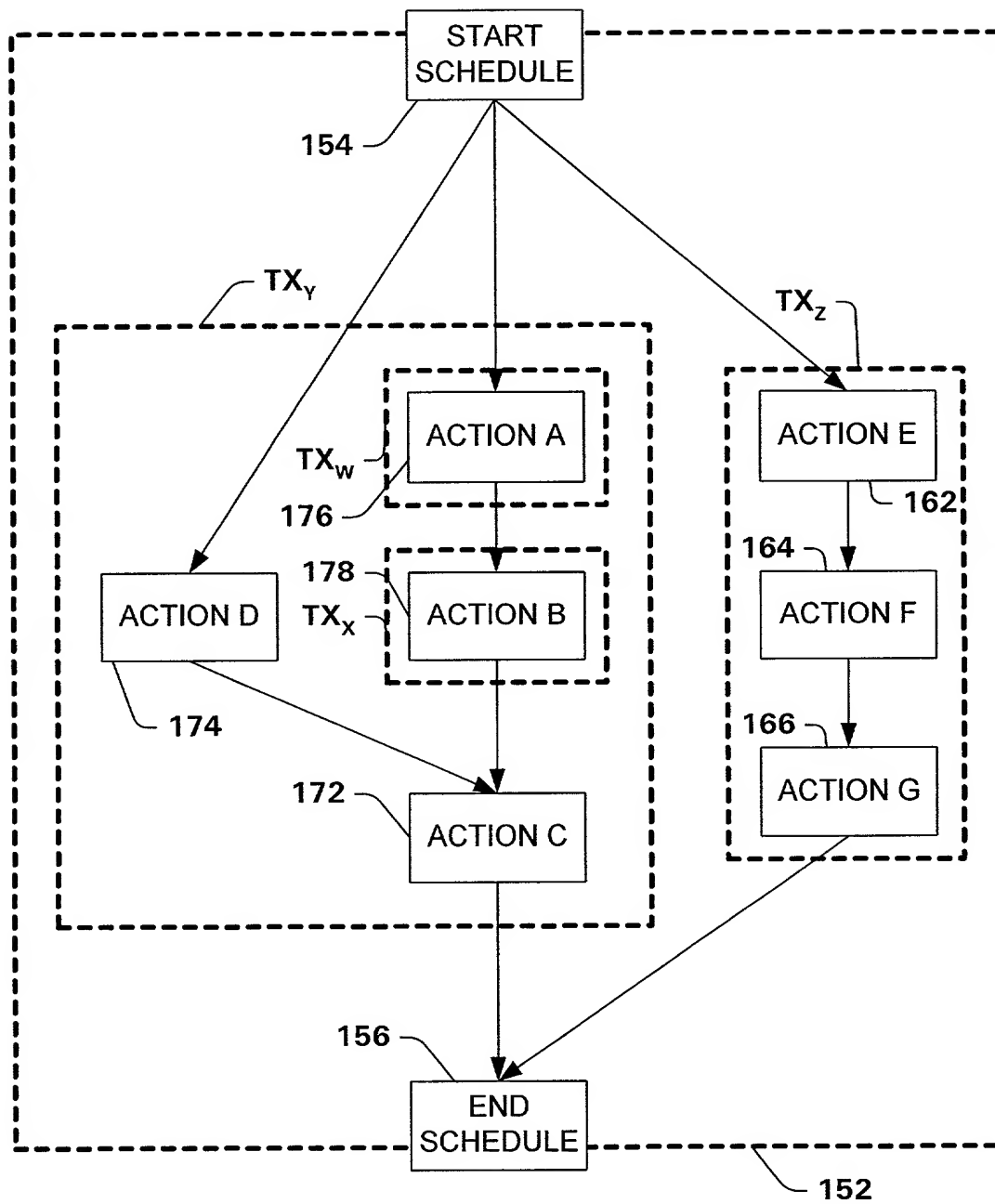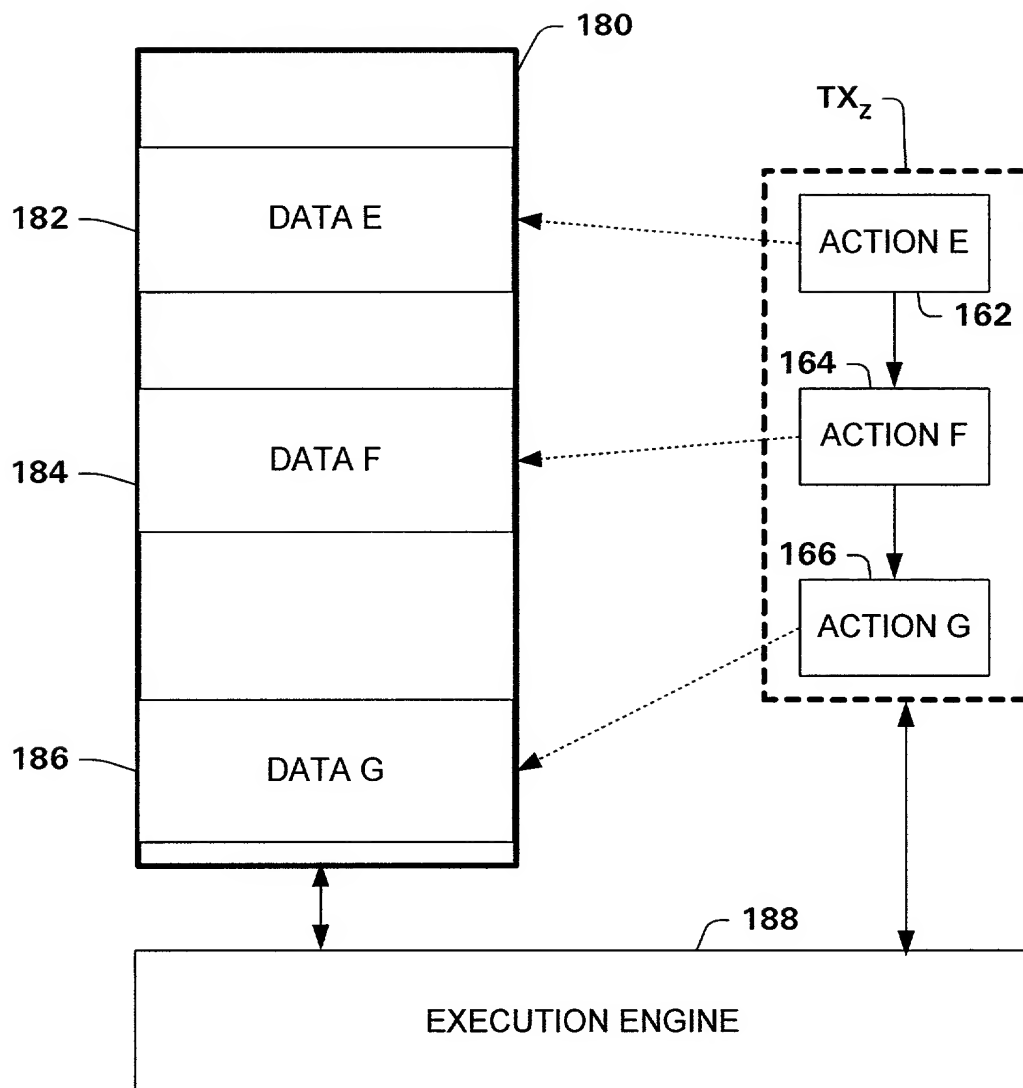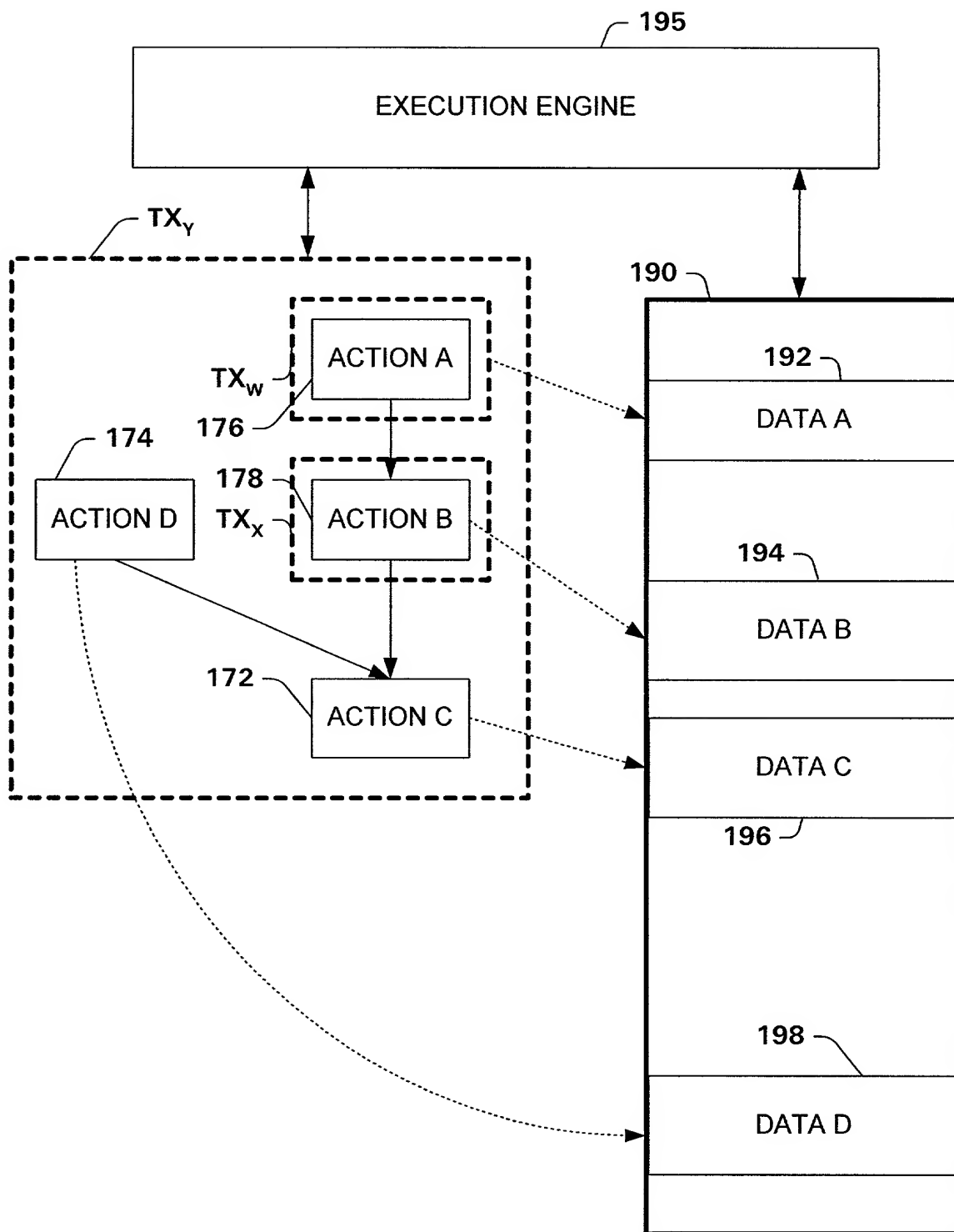
FIG. 11
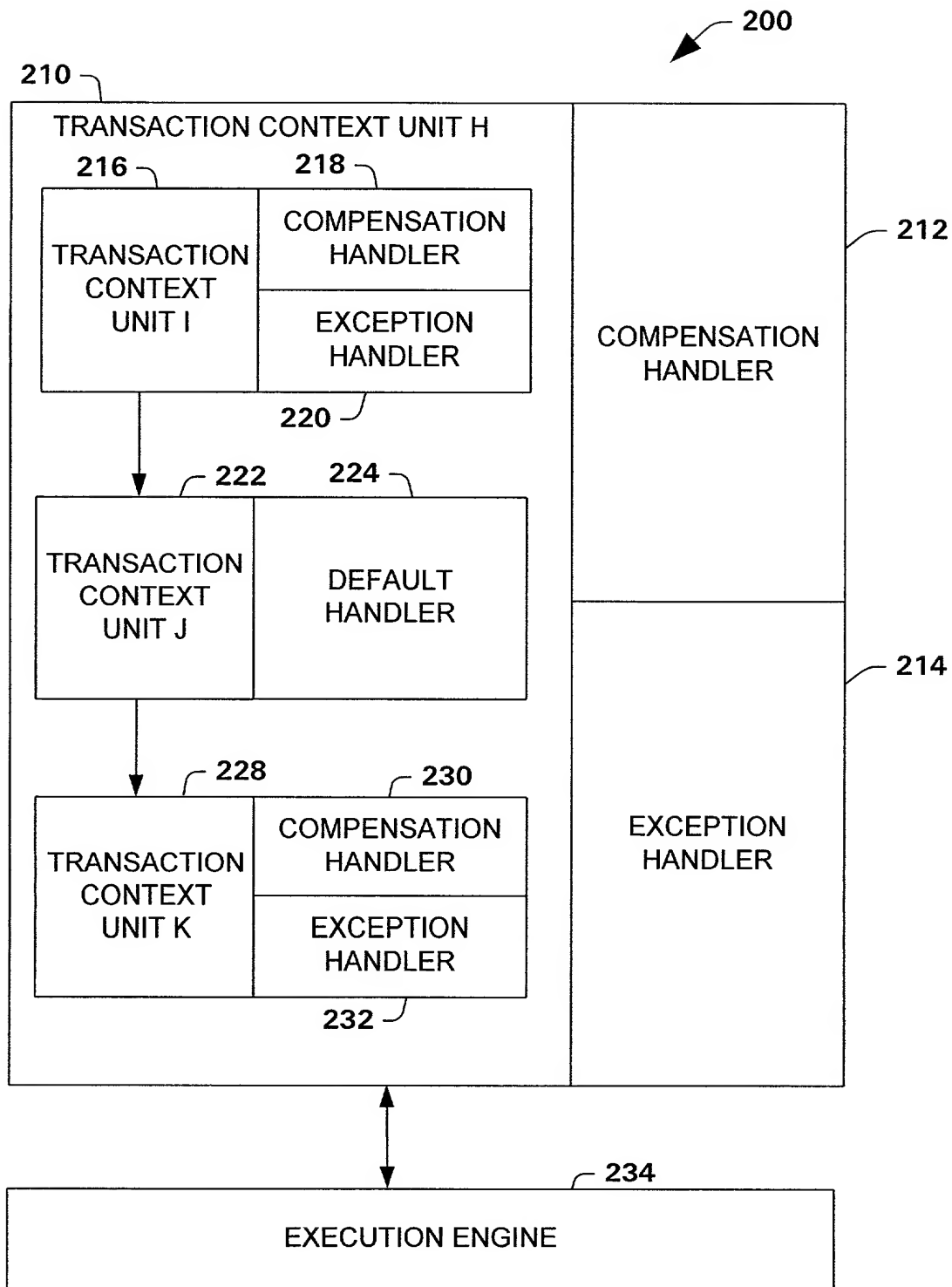
FIG. 12
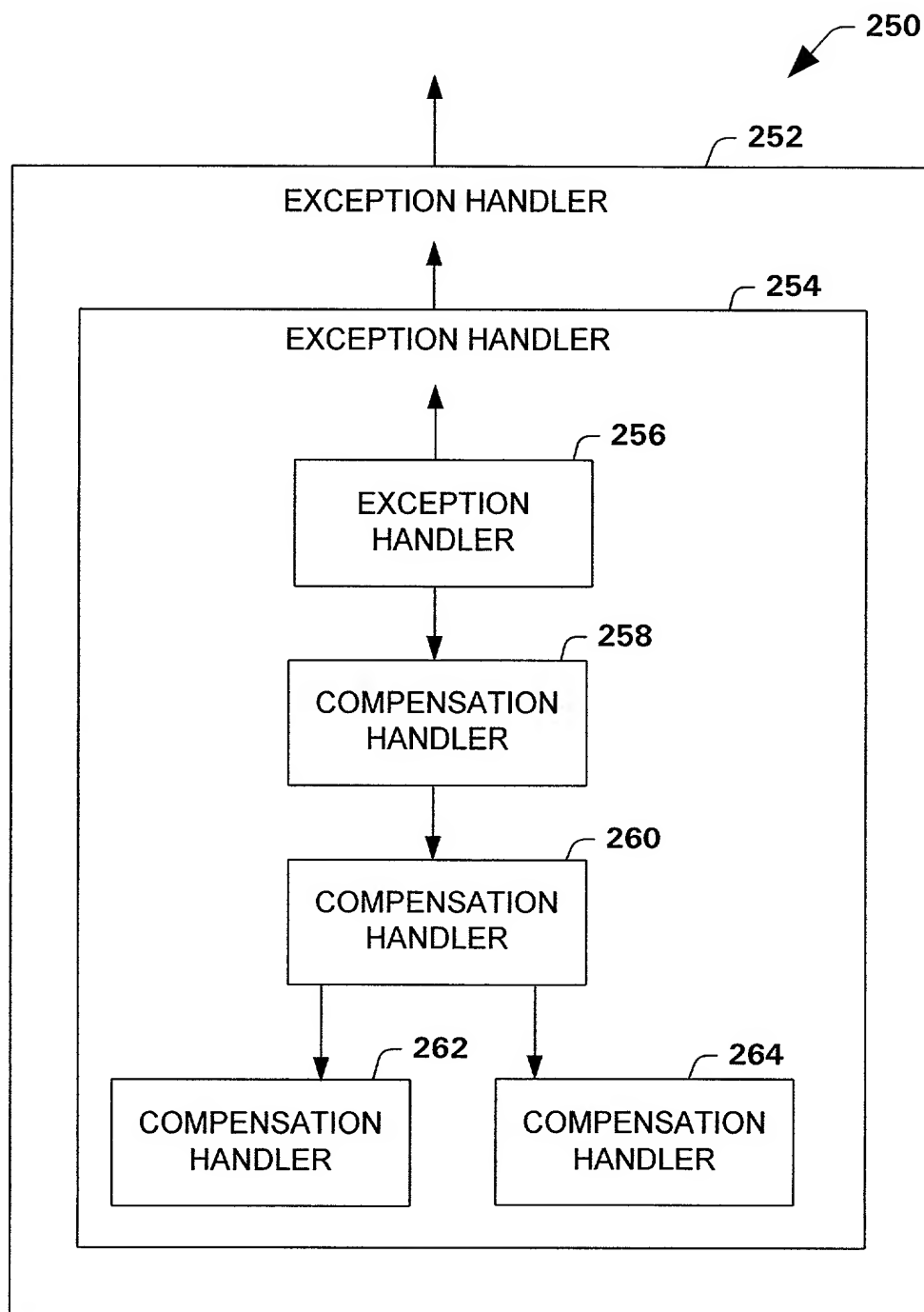
FIG. 13

270

EXCEPTION HANDLER

CALL COMPENSATION HANDLER L

CALL COMPENSATION HANDLER M

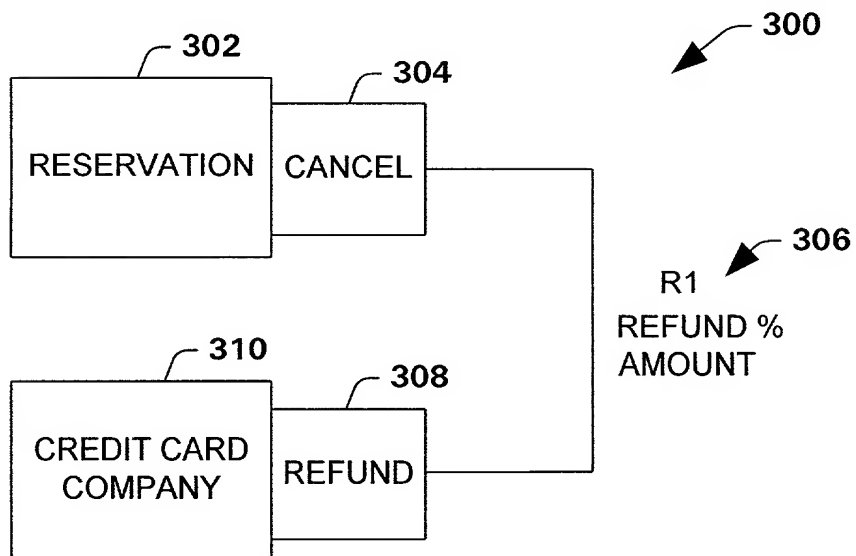CALL COMPENSATION HANDLER N

CALL COMPENSATION HANDLER O

FIG. 14

272

EXCEPTION HANDLER

CALL COMPENSATION HANDLER O

CALL COMPENSATION HANDLER N

CALL COMPENSATION HANDLER M

CALL COMPENSATION HANDLER L

FIG. 15

274

EXCEPTION HANDLER

CALL COMPENSATION HANDLER N

CALL COMPENSATION HANDLER L
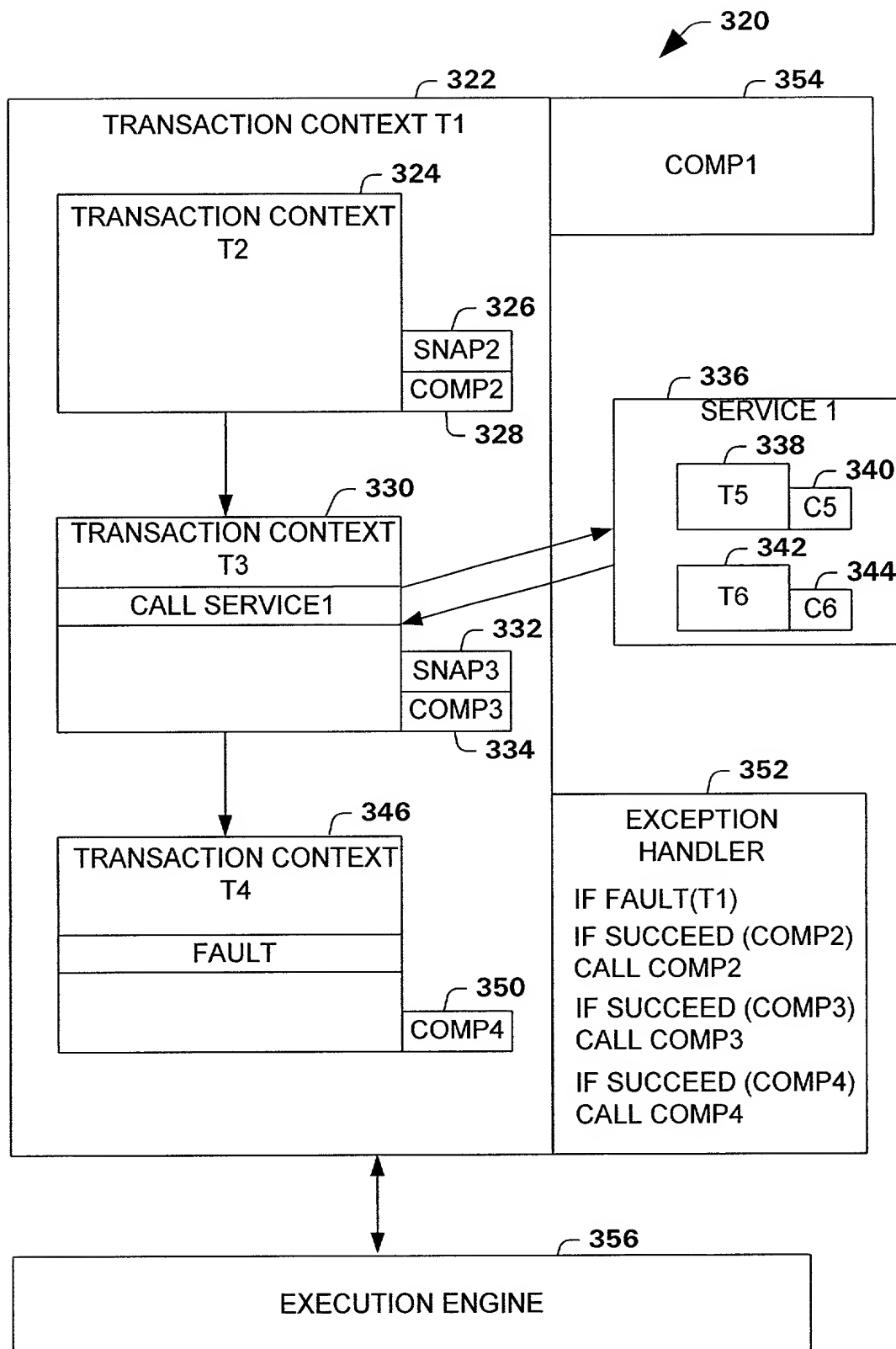
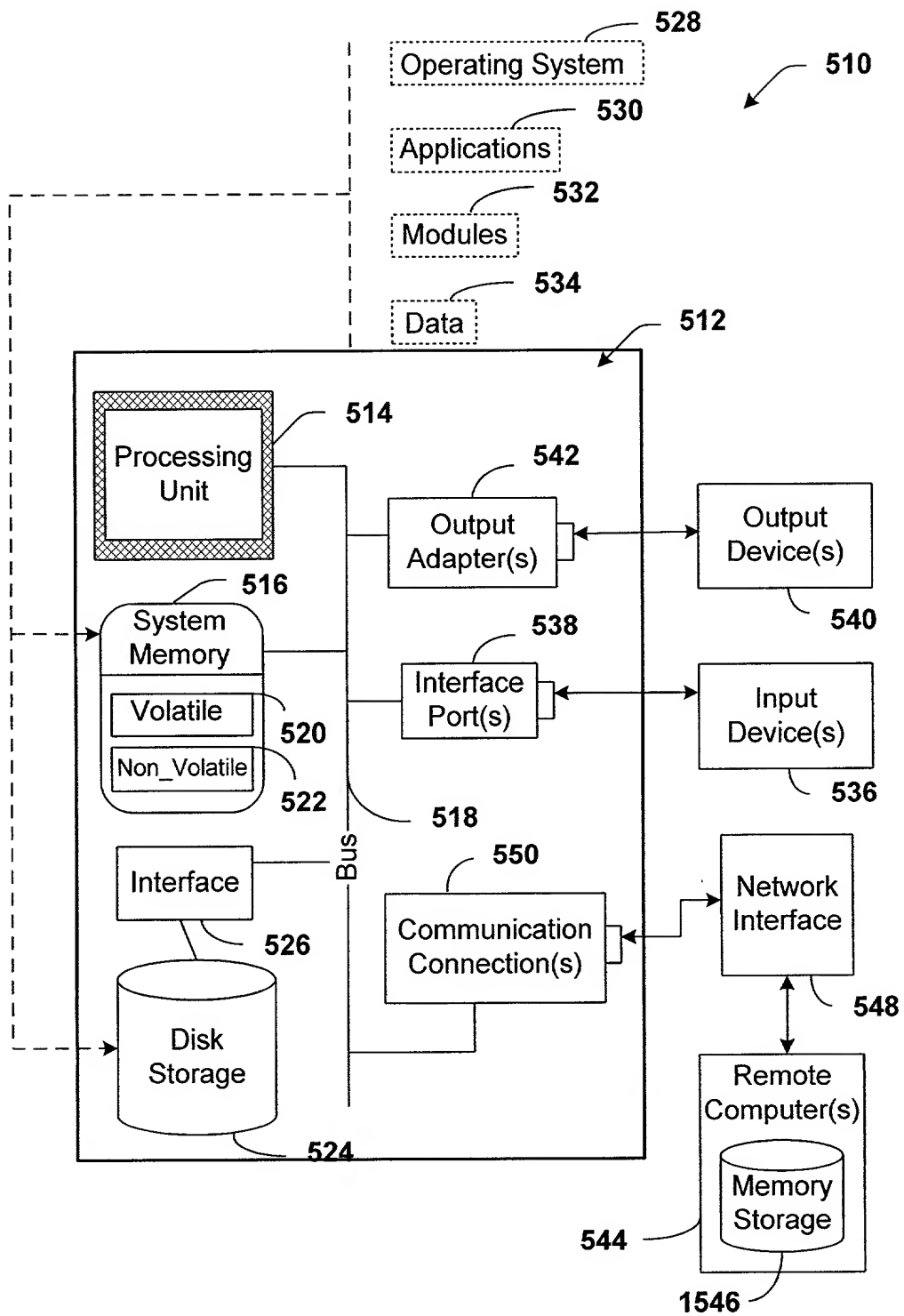CALL COMPENSATION HANDLER O
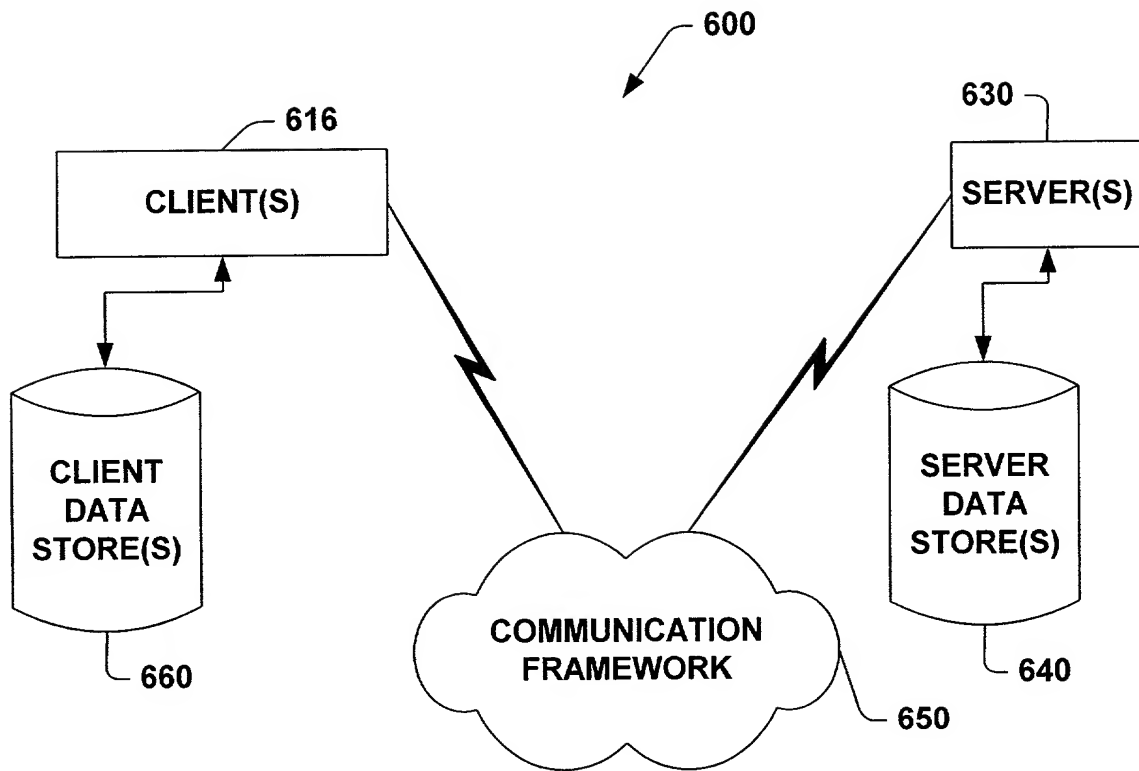
CALL COMPENSATION HANDLER M

FIG. 16
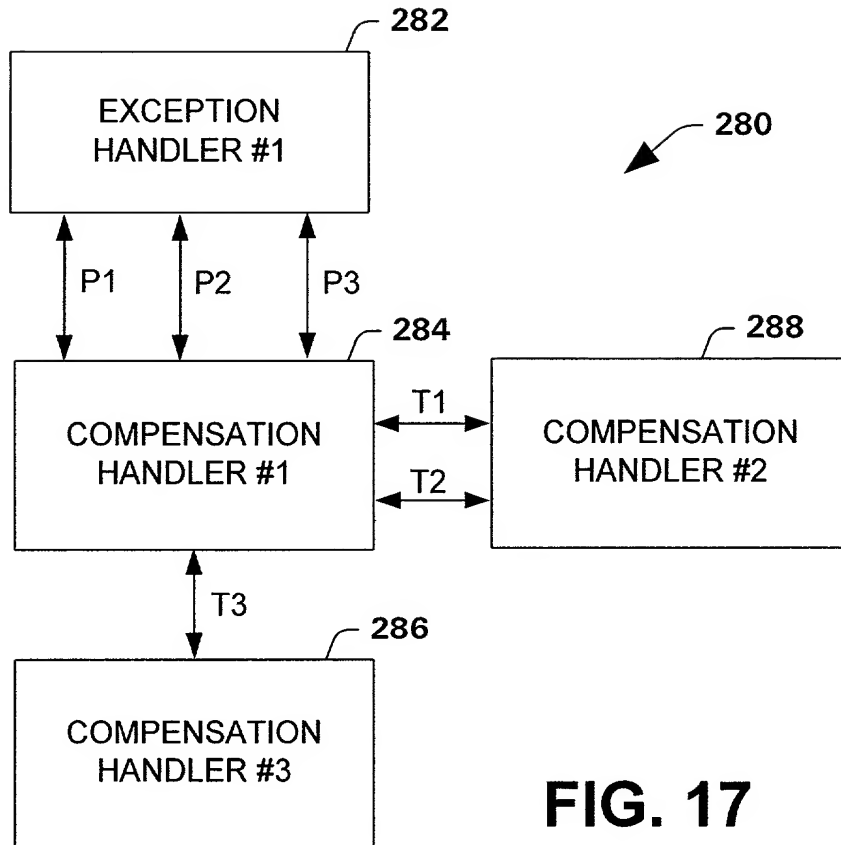
FIG. 17

FIG. 18

FIG. 19

FIG. 20

FIG. 21